Remote Sensing Applications Division (RSAD)

CDR Program Office

Weekly Report for Jun 8, 2012
Ed Kearns, Chief
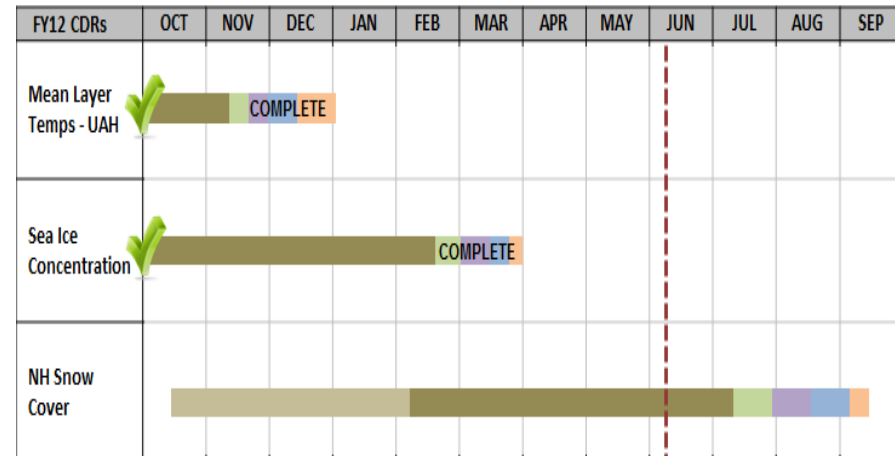
CDR Program Office
FY12 Climate Data Records

Weekly Report – Jun 8, 2012

① Mean Layer Temperatures – Univ of Alabama Huntsville (UAH)
- Completed – Nov 17

② Sea Ice Concentration
- Completed – Mar 28

● **③ Northern Hemisphere Snow Cover**
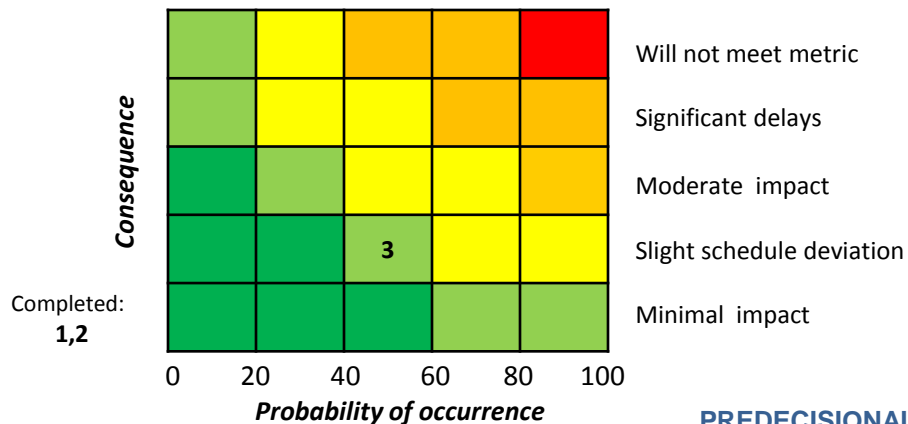- Received draft C-ATBD, reviewed and provided comments back to PI

● No change   ↑ Increasing Risk   ↓ Decreasing Risk   *Candidate CDRs

R2O Schedule

FY12 CDRs	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
Mean Layer Temps - UAH	✔	COMPLETE										
Sea Ice Concentration	✔				COMPLETE							
NH Snow Cover												

R2O PHASE: ASSESSMENT   SUBMISSION PREP   TRANSFER   VALIDATION   ARCHIVE   ACCESS

Risk Matrix

- Will not meet metric
- Significant delays
- Moderate impact
- Slight schedule deviation (3)
- Minimal impact

Completed: 1,2

Consequence

Probability of occurrence (0, 20, 40, 60, 80, 100)

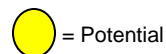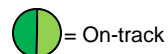## Risk - Mitigation

- **Snow Cover PI has a lot to accomplish by the end of the FY**
  - **Gave PI a detailed schedule and he is working to stay on track**
  - **Continue to transition the MLT-RSS CDR as a back-up**

- **No formal QA on product, software, and documentation**
  - **ORR helps alleviate some of the risks**
  - **Get reviews/input from in house experts as needed**
  - **Need to formally document the current QA steps being done**

PREDECISIONAL DRAFT INFORMATION

6/13/2012

= On-track   = Potential management action required   = Management attention required

2

FY12 TCDR - NH Snow Cover

CDR Product: TCDR – NH Snow Cover, 1966-2012 (10 GB)
GEOSS Societal Benefit: Climate, Water, Ecosystems, Agriculture, Energy

Project Status

- **No Change**
- Received draft C-ATBD, lots of missing info
  - IPT reviewed and provided comments back to PI
- PI's programmer working on netCDF conversion
- PI sent updated Readme – still needs netCDF conversion piece
- SA draft available on google docs for review

SOW developed for:
1) Monthly updates for one year
2) QC tools and training

Next Action/Milestone

- Sample of source code (4/9) – done
- Draft flow diagram (4/27) – done
- Draft C-ATBD (5/21) – received but needs a lot of work

(G) ## Project Risks

- Funding (SDS 2008)
  - SOW in development to get additional funds to PI
- Input data is made with a person in the loop (daily IMS data)
  - Metadata and documentation will detail how the product is created and identify its strengths/weaknesses

ID	Task Name	Status	Start	Stop	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	Initial Assessment	100	10/17/2011	2/9/2012	██	██	██	██								
2	Transfer Prep	35	2/6/2012	8/7/2012					██	██	██	██	██	██	██	
2a	Comment Source Code	25	2/6/2012	5/22/2012					░	░	░	░				
2b	Create Docs (CATBD, Flow Chart, MM, Readme)	50	3/19/2012	6/11/2012						░	░	░	░			
2c	Create NetCDF Dataset	25	5/30/2012	8/7/2012								░	░	░	░	
3	Tranfer Code, Docs, and Data	10	4/18/2012	8/16/2012							██	██	██	██	██	
4	Verify Code, Docs, and Data	10	4/19/2012	8/23/2012							██	██	██	██	██	
5	Archive Code, Docs, and Data	0	5/31/2012	8/31/2012								██	██	██	██	
6	Provide Access to Code, Docs, and Data	0	6/1/2012	9/10/2012									██	██	██	██

PI: Robinson (Rutgers Univ, SDS 2008)   RSAD TM: Young

Backup FY12 CDR - Mean Layer Temperature - RSS

CDR Product: TCDR – Atmospheric Temperature at Four Layers, 1978-2011 (140 MB)
GEOSS Societal Benefit: Energy, Climate, Ecosystems

Project Status

- Provided feedback on sample netCDF conversion & metadata
  - PI on vacation – next version should be sent 6/11
- Draft SA available on Google docs for PI and IPT to review
- About 25% of the code has been documented
  - PI will adjust copyright statement to maintain ©, but grant CDRP unrestricted license

SOW developed for:
1) Monthly updates for one year
2) QC tools and training

Next Action/Milestone

- Draft documented code (3/19) – done
- Draft Flow Diagram (4/9) – done
- Draft C-ATBD (4/30)
- Updated netCDF file sample (6/1)

(G)   **Project Risks**

- Funding (SDS 2008)
  - SOW in development to get additional funds to PI

ID	Task Name	Status	Start	Stop	FY12 Q1			FY12 Q2			FY12 Q3			FY12 Q4		
					Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	Initial Assessment	100	10/17/2011	2/3/2012												
2	Transfer Prep	50	2/6/2012	7/24/2012												
2a	Comment Source Code	25	2/6/2012	5/1/2012												
2b	Create Docs (CATBD, Flow Chart, MM, Readme)	25	3/19/2012	5/22/2012												
2c	Create NetCDF Dataset	75	5/3/2012	7/24/2012												
3	Tranfer Code, Docs, and Data	15	4/18/2012	7/26/2012												
4	Verify Code, Docs, and Data	15	4/19/2012	8/9/2012												
5	Archive Code, Docs, and Data	0	5/31/2012	8/17/2012												
6	Provide Access to Code, Docs, and Data	0	6/1/2012	9/3/2012												

PI: Mears (RSS, SDS 2008)   RSAD TM: Dongsoo Kim

Backup FY12 CDR - Vegetation Bundle

CDR Product: TCDR – Vegetation Bundle, 1981-2012 (2.5 TB)
GEOSS Societal Benefit: Agriculture, Ecosystems, Climate, Biodiversity

Project Status

- **No Change**
- PI sent sample netCDF data
  - **IPT will review data and send feedback**
  - Set up google doc to collect feedback from IPT
- PI sent an updated flow diagram
  - much better than first one, still needs some tweaks

- Two CDRs in transition:
  - Deliver Surface Reflectance and NDVI in FY12
  - Postpone LAI and FPAR until more mature (FY13)

Next Action/Milestone

- Initial Assessment (3/22) – done
- Revised Flow Diagram (4/20) - done
- Samples of documented source code (4/27)
- Draft C-ATBD (6/1)

(Y)   ## Project Risks

- Lots of work to be completed, lowest priority of the CDRs
  - sent PI a detailed task schedule, will push PI to stay on track
- AB and SME were out last week

ID	Task Name	Status	Start	Stop	FY12 Q1 Oct	Nov	Dec	FY12 Q2 Jan	Feb	Mar	FY12 Q3 Apr	May	Jun	FY12 Q4 Jul	Aug	Sep
1	Initial Assessment	100	10/17/2011	4/6/2012												
2	Transfer Prep	10	3/1/2012	8/21/2012												
2a	Comment Source Code	5	3/1/2012	6/1/2012												
2b	Create Docs (CATBD, Flow Chart, MM, Readme)	15	3/15/2012	6/30/2012												
2c	Create NetCDF Dataset	25	4/30/2012	8/21/2012												
3	Tranfer Code, Docs, and Data	0	5/15/2012	8/21/2012												
4	Verify Code, Docs, and Data	0	5/15/2012	8/30/2012												
5	Archive Code, Docs, and Data	0	6/7/2012	9/7/2012												
6	Provide Access to Code, Docs, and Data	0	6/15/2012	9/21/2012												

PREDECISIONAL DRAFT INFORMATION

PI: Vermote (U of Md, CDR Grant 2009)   RSAD TM: Nelson

FY12 TCDR - Sea Ice

CDR Product: TCDR - Sea ice concentration, 1979-2007 (20 GB)
GEOSS Societal Benefit: Climate, Water, Ecosystems, Agriculture

Project Status

- **Opened change request on sea ice CDR to add monthly product**
- **All monthly data has been staged by NSIDC for pickup**
  - **AB will have it archived by Friday (6/7)**
- **PI updated the C-ATBD, Flow Diagram, README, and code**
  - **source code has been submitted for security review**
  - **C-ATBD and other documentation is under IPT review**

SOW in work for:
1) Adding F17 data to daily and monthly
2) Extending POR from 2008 – current
3) Quarterly updates for one year
4) QC tools and training
5) Quarterly access reports

Next Action / Milestone

- Release daily CDR product (3/28) - done
- Create new monthly product (6/8)
- Archive new data and documentation updates (6/22)
- Add monthly product to web (6/29)

G   **Project Risks**

- No Funding to separate the CDR (modularize production code)

ID	Task Name	Status	Start	Stop	FY12 Q2			FY11 Q3			FY12 Q4		
					Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	Initial Assessment	100	12/7/2010	1/7/2011									
2	Transfer Prep	100	3/1/2012	6/15/2012				Monthly					
2a	Comment Source Code	100	6/1/2012	6/15/2012									
2b	Create Docs (CATBD, Flow Chart, MM, Readme)	100	5/15/2012	6/15/2012									
2c	Convert data from binary to NetCDF	100	3/1/2012	6/15/2012									
3	Tranfer Code, Docs, and Data	100	5/1/2012	6/8/2012									
4	Verify Code, Docs, and Data	75	5/8/2012	6/15/2012									
5	Archive Code, Docs, and Data	50	5/15/2012	6/22/2012									
6	Provide Access to Code, Docs, and Data	25	5/21/2012	6/29/2012									

PI: Meier (NSIDC, SDS 2007)   **RSAD Transition Manager: Peng**

CDR – Precipitation PERSIANN

CDR Product: TCDR – Global Precipitation, 2000 -2012
GEOSS Societal Benefit: Water, Climate, Agriculture, Ecosystems

Project Status

- Received copy of presentation slides
  - Passed them along to interested parties
- Received SOW from PI for data production
  - No mention of documentation or source code in SOW
- Had good WebEx presentation from Soroosh
  - Stand up IPT (Sorooshian, Wunder, Nelson, AB?, OB?)

Next Action/Milestone

- Assessment
- Sample of source code
- Draft flow diagram
- Draft C-ATBD

(G) ## Project Risks

- Holes in input data (ISCCP) needed to create earlier CDR
  - In house expert for ISCCP

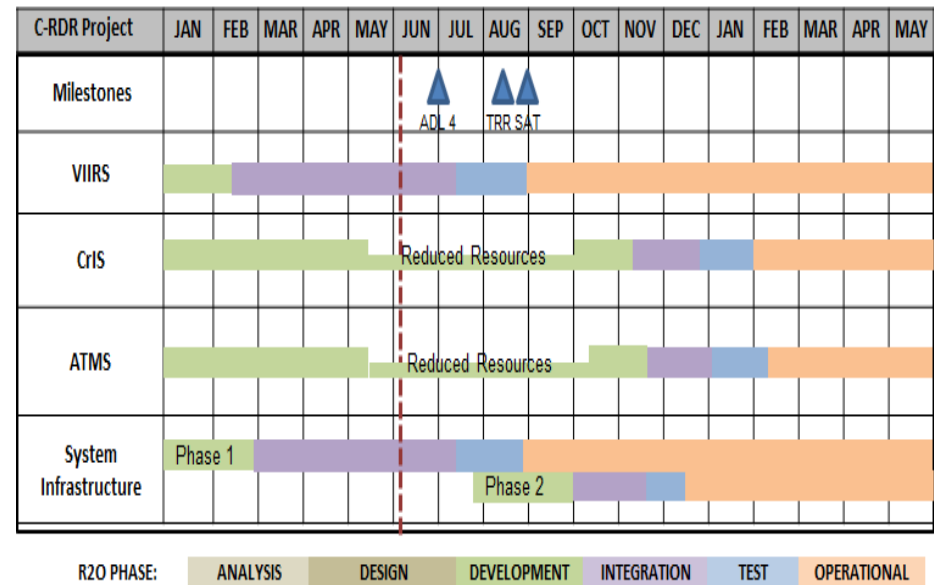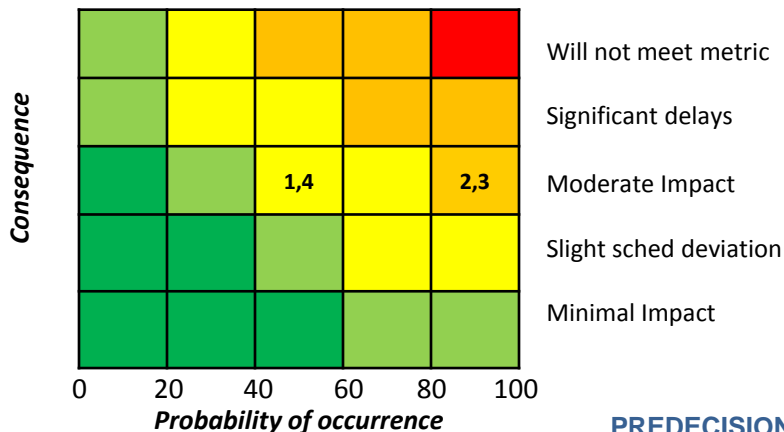## Project Schedule

TBD

PI: Sorooshian (U of Cal, Irvine, CHRS, CICS)   RSAD TM: Nelson

Weekly Report – June 8, 2012

① VIIRS
- Integrating the with the system infrastructure.

② CrIS
- Developing code to write the CrIS C-RDR.

③ ATMS
- Developing code to write the ATMS C-RDR.

④ System Infrastructure
- Integrating with the VIIRS C-RDR.

• Successfully ran VIIRS data through the C-RDR system infrastructure and C-RDR packer.

•**Setting up data flow from CLASS, SIPGenSYS, to C-RDR.**

C-RDR Project	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY
Milestones						ADL 4		TRR SAT									
VIIRS																	
CrIS					Reduced Resources												
ATMS					Reduced Resources												
System Infrastructure	Phase 1							Phase 2									

R2O PHASE:	ANALYSIS	DESIGN	DEVELOPMENT	INTEGRATION	TEST	OPERATIONAL

Risk Matrix

Consequence (y-axis): Will not meet metric; Significant delays; Moderate Impact; Slight sched deviation; Minimal Impact

Matrix cells: Moderate Impact row: 1,4 (at ~40-60); 2,3 (at ~80-100)

Probability of occurrence (x-axis): 0 20 40 60 80 100

Risk and Mitigation

VIIRS, CrIS, ATMS –
•Resources are being reduced. Delivery of CrIS and ATMS will be delayed.
•Operational software is under maintenance, updated versions may affect C-RDR ported version.

System Infrastructure –
Reliability of NPP RDRs from CLASS. Need to test ingest of RDRs from CLASS and develop an automated mechanism for re-requesting data.
•Ability of CLASS to handle the frequency and volume of NPP data. CLASS has been successful during system tests.
• Archive in CLASS is currently cost prohibitive. Need to identify alternate archive. Plan to store C-RDRs on HPSS until migration to CLASS.

PREDECISIONAL DRAFT INFORMATION

6/13/2012

8

◐ = On-track   ◯ = Potential management action required   ◐ = Management attention required

Visible Infrared Imaging Radiometer Suite (VIIRS)

C-RDR Product: Raw sensor measurements with usage and provenance metadata in easily accessible netCDF4 format
GEOSS Societal Benefit: Climate, Water, Ecosystems, Agriculture, Biodiversity, Energy

Project Status

- **Fixing minor errors identified during integration.**
- Successfully ran VIIRS data from CLASS through C-RDR packer.
- Completed dynamic C-RDR file-level metadata code.
- Updated CrdrPacker software for Crdr file naming.
- Modified the supporting data metadata.
- Implemented and verified netCDF compression.
- Verifying (IDPS) documentation and code changes with DEWG.
- Wrote a test application to dump data from RDR APIDs.
- Completed writing science and spacecraft diary data.
- Completed test of code that writes VIIRS Support Data.
- Tracked down inconsistencies with PC files (docs vs code).

Next Action / Milestone

- Integrating the VIIRS C-RDR software and the system infrastructure.

(Y)

Project Risks

- Complexity of the NPP/JPSS RDRs and operational software
- Operational software is under maintenance, updated versions may affect C-RDR ported version

Project Schedule

ID	Task Name	Status	Start	Stop	FY12 Q1 Oct	Nov	Dec	FY12 Q2 Jan	Feb	Mar	FY12 Q3 Apr	May	Jun	FY12 Q4 Jul	Aug	Sep
1	Analysis	Completed	10/23/2009	5/4/2010												
2	Design	Completed	5/6/2010	1/5/2011												
3	Development	95.00%	1/6/2011	1/30/2012												
3a	Develop VIIRS processing component	95.00%	1/6/2011	1/12/2012												
3b	Test VIIRS processing component	95.00%	12/28/2011	1/30/2012												
4	Integration	10.00%	1/31/2012	3/26/2012												
5	Test		3/23/2012	4/12/2012												
5a	Dry Runs		3/23/2012	4/11/2012												
5b	System Acceptance Test		4/12/2012	4/12/2012												
6	Operational		4/13/2012													

Being Reworked

POC: Biard

Cross-track Infrared Sounder (CrIS)

C-RDR Product: Raw sensor measurements with usage and provenance metadata in easily accessible netCDF4 format
GEOSS Societal Benefit: Climate, Water, Energy

Project Status
- CrIS Developer is being redirected to new development. CrIS C-RDR will be delayed.
- Testing code for collecting and writing engineering data.
- Completing draft of CrIS C-RDR Product Specification.
- Built and executing CrIS software in ADL 3.1.
- CrIS proprietary code issues have been resolved.
- Obtained the ADL version of the CrIS code.
- Developing code to create data structures for writing the C-RDR.
- Creating a MATLAB reader for the C-RDR to provide easy access.
- Evaluating processing of C-RDR with MATLAB and IDL
- Defining the netCDF4 structure for the C-RDR and developing software for writing the C-RDR.
- Ported operational algorithms (Space Dynamics Lab at Utah State)

Next Action / Milestone
- Develop code to write CrIS C-RDR.

O

Project Risks
- CrIS Developer is being redirected to new development. CrIS C-RDR will be delayed. Schedule will be updated when resources are available.
- Complexity of the NPP/JPSS RDRs and operational software
- Operational software is under maintenance, updated versions may affect C-RDR ported version. Mitigated by using ADL.

Project Schedule

ID	Task Name	Status	Start	Stop	FY12 Q1			FY12 Q2			FY12 Q3			FY12 Q4		
					Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	Analysis	Completed	8/16/2010	11/24/2010												
2	Design	90.00%	11/26/2010	2/15/2011												
3	Development (Phase 2)	30.00%	1/3/2012	4/7/2012												
3a	Develop CrIS processing component	60.00%	1/3/2012	3/8/2012												
3b	Test CrIS processing component		3/2/2012	4/7/2012												
4	Integration		4/2/2012	4/27/2012												
5	Test		4/30/2012	5/9/2012												
5a	Dry Runs		4/30/2012	5/8/2012												
5b	System Acceptance Test		5/9/2012	5/9/2012												
6	Operational		5/10/2012													

Delayed

PREDECISIONAL DRAFT INFORMATION

POC: Burden

Advanced Technology Microwave Sounder (ATMS)

C-RDR Product: Raw sensor measurements with usage and provenance metadata in easily accessible netCDF4 format
GEOSS Societal Benefit: Climate, Water, Energy

Project Status
- ATMS Developer is being redirected to new development. ATMS C-RDR will be delayed.
- Developing code to write science data.
- Working on ATMS C-RDR Product Specification.
- Testing the software framework for the Support Data Packer and Unpacker.
- Updating C-RDR data format.
- Defining the C-RDR format, contents, and metadata
- Identifying code and data structures required for C-RDR processing.
- Verified processing of ATMS algorithms
- IDPS ATMS algorithm executing in ADL at NCDC
- Obtained ported algorithms (SDL at Utah State)

Next Action / Milestone

- Develop the code to produce the C-RDR.

Project Risks
- ATMS Developer is being redirected to new development. ATMS C-RDR will be delayed. Schedule will be updated when resources are available.
- Complexity of the NPP/JPSS RDRs and operational software
- Operational software is under maintenance, updated versions may affect C-RDR ported version.
- Developer shares time working NPP and branch management issues.

Project Schedule

ID	Task Name	Status	Start	Stop	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
					FY12 Q1			FY12 Q2			FY12 Q3			FY12 Q4		
1	Analysis	Complete	10/29/2010	2/10/2011												
2	Design	95.00%	2/11/2011	4/29/2011												
3	Development	35.00%	5/2/2011	3/25/2012												
3a	Develop ATMS processing component	70.00%	5/2/2011	2/29/2012												
3b	Test ATMS processing component	5.00%	2/18/2012	3/25/2012												
4	Integration		3/26/2012	4/18/2012												
5	Test		4/19/2012	4/26/2012												
5a	Dry Runs		4/19/2012	4/25/2012												
5b	System Acceptance Test		4/26/2012	4/26/2012												
6	Operational		4/27/2012													

Delayed

POC: Saunders

C-RDR System Infrastructure

C-RDR Product: Infrastructure to automate the production of the C-RDRs.
GEOSS Societal Benefit: Climate, Water, Ecosystems, Agriculture, Biodiversity, Energy

Project Status

- **Setting up the automated data flow from CLASS in the integration environment.**
- Created initial VIIRS C-RDR from CLASS mission data in integration environment.
- Development environment is set up on the CICS network.
- Working on managing queues and processing jobs.
- Locating, validating, and statusing files for processing.
- Developing code for ingest detection and processing.
- C-RDR needs to handle CLASS manifests. SIPGenSys will not.
- Completed NPP 14 day Ground Operations Exercise (GOE).
- Completed throughput testing for SIPGenSys.
- Creating database tables and access procedures for config files.
- Setting up configuration files and software for the ingest test.

Next Action / Milestone

- Integrating and testing the system infrastructure.

(Y)

Project Risks

- Need to develop an automated re-request mechanism for CLASS.

Project Schedule

ID	Task Name	Status	Start	Stop	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	Analysis	Completed	9/29/2010	4/22/2011												
2	Design	90.00%	4/25/2011	7/8/2011												
3	Development	80.00%	5/31/2011	2/28/2012												
3a	Develop infrastructure	90.00%	5/31/2011	2/14/2012												
3b	Test infrastructure	70.00%	9/27/2011	2/28/2012												
4	Integration (Phase 2)	5.00%	1/31/2012	3/26/2012												
5	Test		3/23/2012	4/12/2012												
5a	Dry Runs		3/23/2012	4/11/2012												
5b	System Acceptance Test		4/12/2012	4/12/2012												
6	Operational		4/13/2012													

FY12 Q1: Oct, Nov, Dec — FY12 Q2: Jan, Feb, Mar — FY12 Q3: Apr, May, Jun — FY12 Q4: Jul, Aug, Sep

Being Reworked

PREDECISIONAL DRAFT INFORMATION

POC: Copley